DECmate™ II

Word Processing Using Sort

digital

AA–N185A–TA

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AA–N185A–TA
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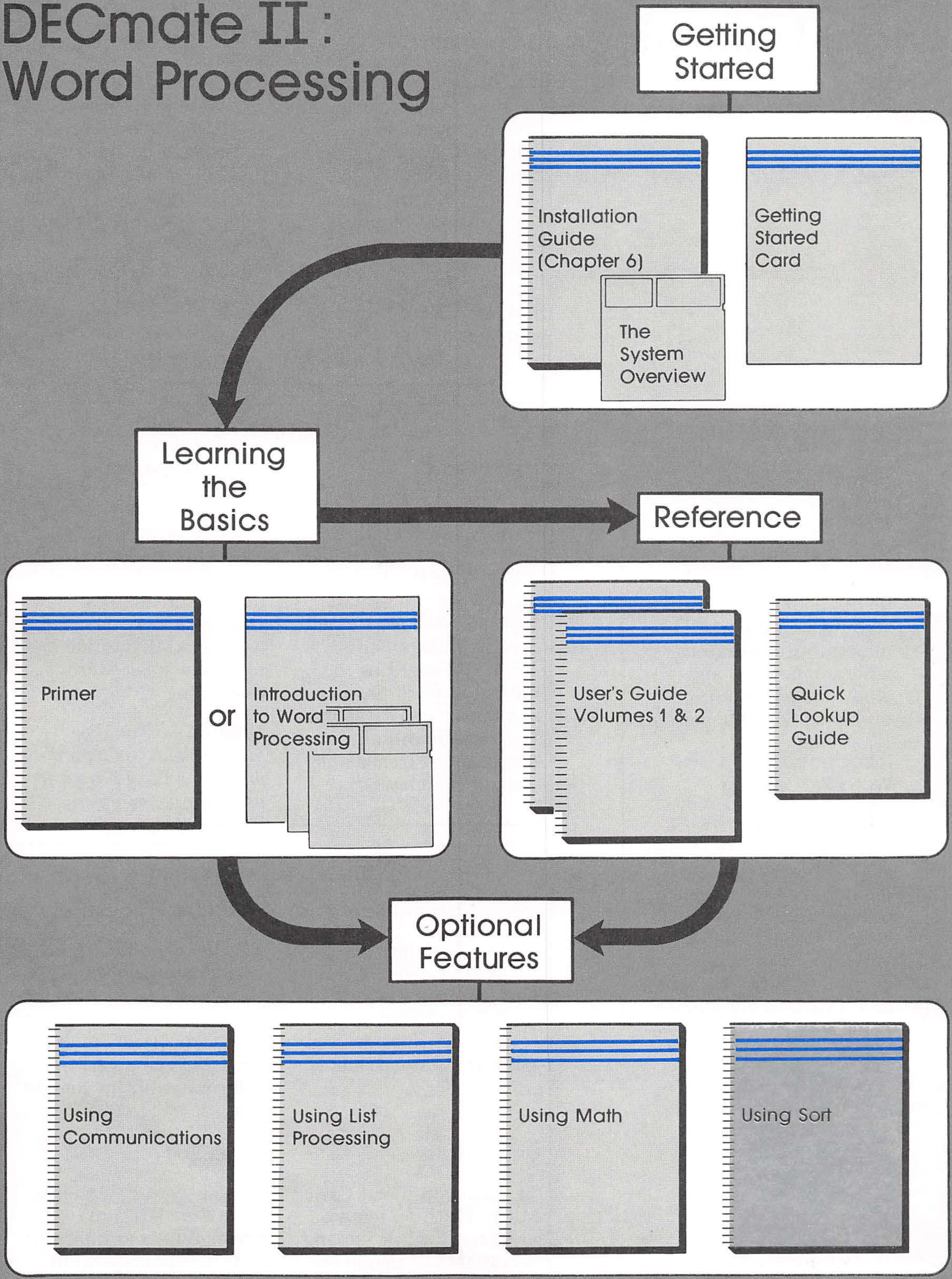
DECmate II: Word Processing



See the reverse side for a description of each document and diskette.

DECmate II: Word Processing

Learning the Basics

Word Processing Primer

Teaches you word processing basics such as creating, editing, printing and copying documents using a quick, step-by-step format. This manual also tells you where to go next and what to do if you have problems with DECmate.

Introduction to Word Processing

Teaches you basic word processing: how to create, edit and print documents. This self-paced course contains two diskettes (Introduction to WPS–Drive 0 and Introduction to WPS–Drive 1) and a card to get started.

Getting Started

The System Overview

Teaches you how to identify the system parts, and handle diskettes. This self-paced course contains one diskette. Read Chapter 6, Using the System Overview Diskette, in the *DECmate II Installation Guide* (order number EK–DECM2–IN) to begin the course.

Getting Started Card

Teaches you how to turn ON your word processing system, activate features, initialize a document diskette, and back up the system diskette. It also tells you who and when to call for help.

Reference

User's Guide: Volumes 1 & 2

Explains DECmate II word processing procedures. Volume 1 contains basic word processing tasks: how to create, edit and print documents. Volume 2 contains advanced word processing tasks such as pagination, text manipulation, document searches and control commands.

Quick Lookup Guide

Summarizes basic word processing procedures. This guide is organized by tasks, such as creating or printing text. If you are an experienced user, read this guide to review basic word processing.

Note: *You should be familiar with basic word processing procedures before using the optional features.*

Optional Features

Using Communications

Teaches you how to use Communications. Communications lets you send information to and receive information from other computer systems.

Using List Processing

Teaches you how to use List Processing. List Processing lets you print the same document (such as a form letter) many times, varying certain information from copy to copy.

Using Math

Teaches you how to use Math. Math lets you do arithmetic while editing documents or using List Processing.

Using Sort

Teaches you how to use Sort. Sort lets you arrange lists of information in alphabetical or numerical order.

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Preface

PRODUCT NAME: DECmate II/WPS

VERSION: 1.0

This manual explains how to operate the optional DECmate ™ II Word Processing Sort feature. Use Sort to arrange records in a list document in the alphabetic and/or numeric order you specify.

Intended Audience

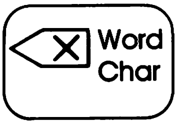
To use Sort, you should be familiar with DECmate word processing and list processing. No prior experience with Sort is necessary.

How to Use This Manual

To learn Sort, follow the examples, exercises, and step-by-step procedures in this manual. A glossary of terms associated with Sort is included.

NOTE: The examples and exercises are drawn from Digital Equipment Corporation's DECdirect catalogue, and they are not statements of DIGITAL's prices or policies.

Conventions

`Dot Matrix`	Text printed in dot matrix appears on the screen.
<field name>	Text inside angle brackets is a field name for List Processing, Sort, or Math.
Rubout key	The key marked with a symbol used to rub out functions. 
ALL CAPS	The function or editing key to press. For example: press ADVANCE.
Gold XXX	Press the Gold key and then a function key. For example: Gold MENU.
Type	Enter text into a document from the keyboard.
Press	Enter a command from the keyboard. For example: press DEL WORD.

1

Overview

To Use Sort Quickly:

1. Check the Main Menu (3rd page) for the **SR** option.
2. Activate Sort, if necessary.
3. Create the input document, containing the list of information to sort. If you already have the input document, note its name or number.
4. Create the sort specification.
5. Select Sort Option (**SR**) from the Main Menu.
6. Type the name or number of the sort specification document and press RETURN.
7. Type the name or number of the input document and press RETURN.
8. Type the name or number of the output document and press RETURN.
9. Type GO to begin Sort.

What to Do with Sort

Use Sort to organize records to your particular order. You can sort with as many as twelve different *keys* or *fields* in a record. (A key or field identifies a specific kind of information.)

You can organize records in a list document into *ascending* or *descending* alphabetical and/or numerical order on one or more keys or fields in each record.

For example, some of the keys on which you might sort a list of customer records are:

> Last name, city, state, zip, debits, credits, item numbers, and inventory numbers.

To save money on postage, for example, you could sort on zip codes, then use List Processing to print letters to a specified zip code.

Or, you might sort on customers' last names to have an alphabetical *file*. Then, you might add new customer records to the file and re-sort the list to put the records in a new sequence.

Major Parts of Sort

- *Activate* Sort on the system diskette. (Once activated, it is not necessary to activate it again on that system diskette.) See Chapter 2.
- An *input document* that contains the information to be organized. (For example, a List Processing list document.) See Chapter 3.
- A *sort specification document* that contains the instructions to organize the input document. See Chapter 4.
- An *output document* that contains the reorganized list. See Chapter 5.

The Sort Alphabet

You use Sort to put input document records into an ascending or descending order by specifying the keys or fields on which you want DECmate to sort those records. DECmate puts the records in the order you decide by comparing characters in the field values of the specified keys with the order of those characters in the *Sort Alphabet.*

Ascending order starts with the *lowest value* in the Sort Alphabet and continues to the highest. Descending order starts with the *highest value* and continues to the lowest. The symbols @ and ` have the lowest value; the punctuation mark ? has the highest value. Letters, numerals, other symbols and punctuation marks come between.

The complete Sort Alphabet is on the next page.

	Value	Char.	Comment	Value	Char.	Comment	
ASCENDING	1	@, `	grave is on HALT key	32	_	underline	
	2	A, a		33		space	
	3	B, b		34	!	exclamation point	
	4	C, c		35	"	quotation mark	
	5	D, d		36	#	number sign	
	6	E, e		37	$	dollar sign	
	7	F, f		38	%	percent sign	
	8	G, g		39	&	ampersand	
	9	H, h		40	'	apostrophe	
	10	I, i		41	(	open parenthesis	
	11	J, j		42	)	close parenthesis	
	12	K, k		43	*	asterisk	
	13	L, l		44	+	plus sign	
	14	M, m		45	,	comma	
	15	N, n		46	-	hyphen or minus sign	
	16	O, o		47	.	period	
	17	P, p		48	/	slash	
	18	Q, q		49	0		
	19	R, r		50	1		
	20	S, s		51	2		
	21	T, t		52	3		
	22	U, u		53	4		
	23	V, v		54	5		
	24	W, w		55	6		
	25	X, x		56	7		
	26	Y, y		57	8		
	27	Z, z		58	9		
	28	[, {	left bracket/brace	59	:	colon	
	29	\, |	backslash, vert. line	60	;	semicolon	
	30	], }	right bracket/brace	61	=	equal sign	
	31	^, ~	circumflex, tilde	62	?	question mark	DESCENDING

Figure 1 Sort Alphabet

2

Activating Sort

You must activate Sort on your system diskette before it can be used. Once activated, Sort is active for the life of the system diskette.

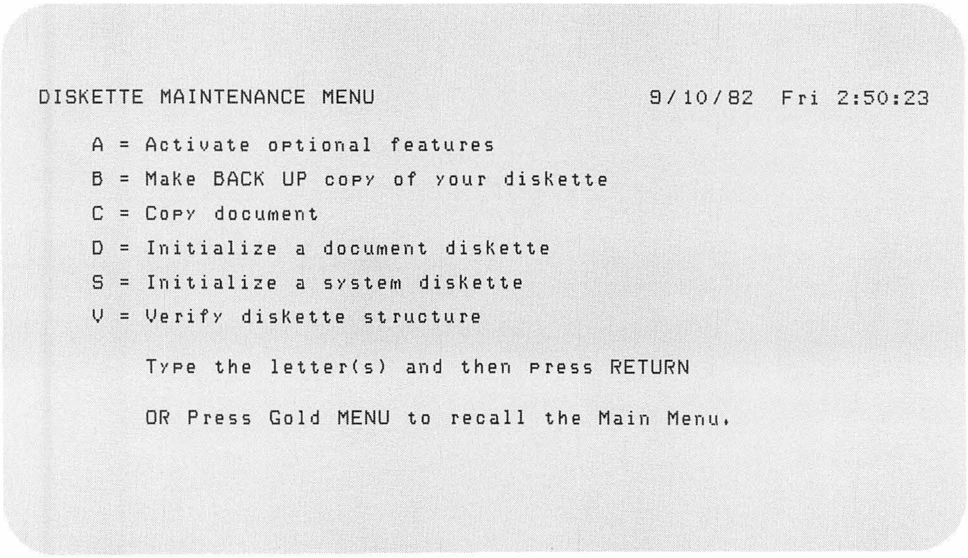
To activate Sort, you need two diskettes:

1. The Sort feature diskette labeled *WPS SORT RX50.*
2. A system diskette labeled *WPS THE BASICS RX50.*

Is Sort Already Active?

Sort may already be active on the system diskette. To check whether it is or not, display the Diskette Maintenance Menu (see Figure 2).

Select **MC** from the Main Menu.



```
DISKETTE MAINTENANCE MENU                           9/10/82  Fri 2:50:23

     A = Activate optional features
     B = Make BACK UP copy of your diskette
     C = Copy document
     D = Initialize a document diskette
     S = Initialize a system diskette
     V = Verify diskette structure

          Type the letter(s) and then press RETURN

          OR Press Gold MENU to recall the Main Menu.
```

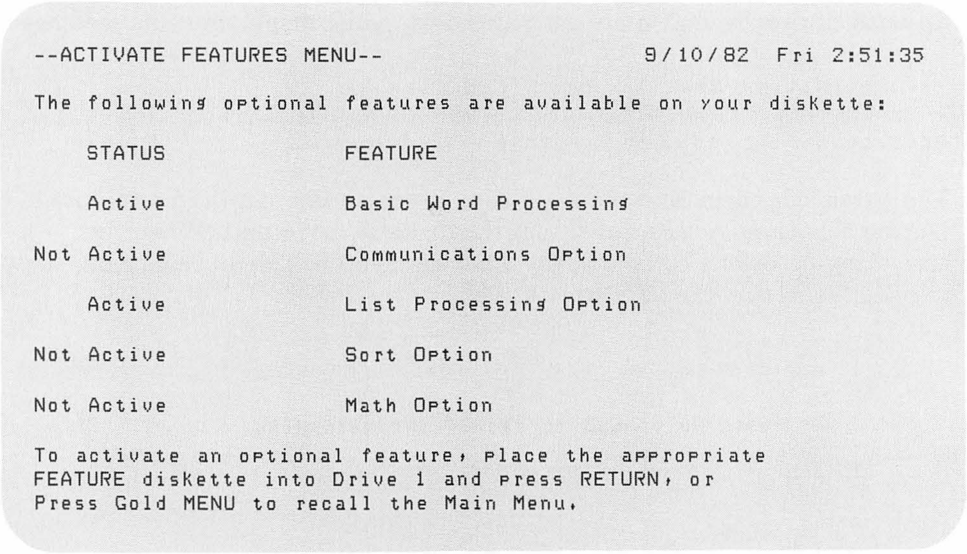
Figure 2   Diskette Maintenance Menu

Now, select the **A** option and press RETURN. The Activate Features Menu appears. (See Figure 3.) This menu shows which optional features are active on the system diskette.

If *Active* appears before *Sort Option*, Sort is active. Press Gold MENU to recall the Main Menu.

If *Not Active* appears before *Sort Option*, activate the feature, as explained in the next section.

NOTE: Your display may differ from the one shown in Figure 3, if other optional features are active.



```
--ACTIVATE FEATURES MENU--                         9/10/82  Fri 2:51:35

The following optional features are available on your diskette:

    STATUS                  FEATURE

    Active                  Basic Word Processing

Not Active                  Communications Option

    Active                  List Processing Option

Not Active                  Sort Option

Not Active                  Math Option

To activate an optional feature, place the appropriate
FEATURE diskette into Drive 1 and press RETURN, or
Press Gold MENU to recall the Main Menu.
```

Figure 3 Activate Features Menu

To Activate Sort

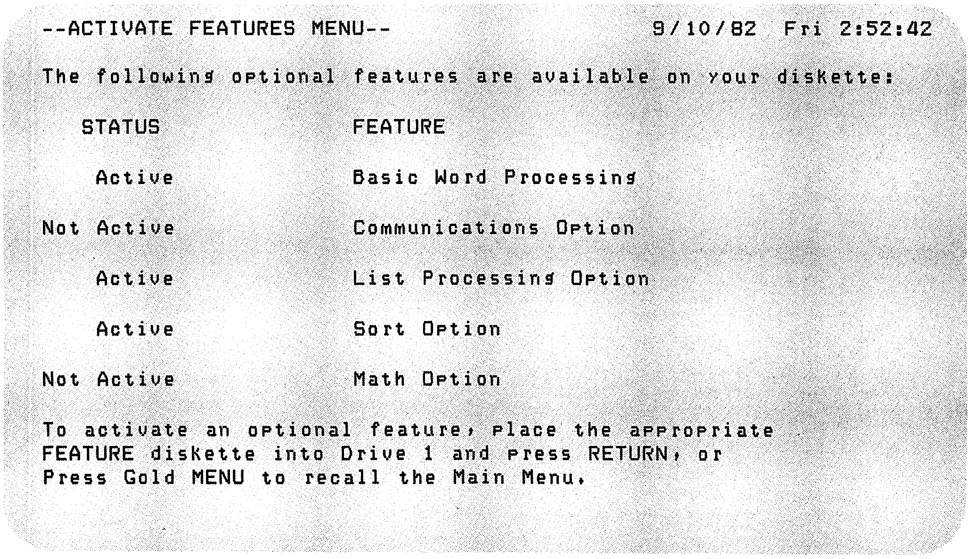
While the Activate Features Menu is displayed:

1. Leave your system diskette in drive 0.
2. Remove any diskette in drive 1.
3. Put the Sort feature diskette in drive 1. Make sure the red arrow on the diskette lines up with the red mark on drive 1.
4. Close both drive doors.
5. Press RETURN.

DECmate automatically checks drive 1 to make sure it contains a feature diskette. If it does, DECmate activates Sort, while displaying this message:

```
 -- Activating Special Feature Option --

Activation in progress, please stand by ...
```

The automatic check and the activating process take less than a minute. During this time, noises come from the diskette drive unit. When the activating process is complete, the Activate Features Menu reappears, showing Sort as *Active*. (See Figure 4.)



```
--ACTIVATE FEATURES MENU--                      9/10/82  Fri 2:52:42

The following optional features are available on your diskette:

   STATUS               FEATURE

    Active              Basic Word Processing

Not Active              Communications Option

    Active              List Processing Option

    Active              Sort Option

Not Active              Math Option

To activate an optional feature, place the appropriate
FEATURE diskette into Drive 1 and press RETURN, or
Press Gold MENU to recall the Main Menu.
```

Figure 4 Sort Activated

Press Gold MENU to return to the Main Menu. The Sort Option (**SR**) should appear on page 3 of the Main Menu. Remember to remove the Sort feature diskette from drive 1 before doing word processing.

NOTE: *After the optional feature has been activated, make a copy of the system diskette.*

If Sort Does Not Activate

Make sure you are using the diskette for the Sort option. One of the following system messages may appear during the activation process:

```
Drive 1 does not contain a valid FEATURE diskette.
```

The wrong diskette is in drive 1, such as a damaged feature diskette or a document diskette.

Press RETURN to recall the Activate Features Menu. Put the correct feature diskette in drive 1 and press RETURN.

```
Error on drive 1 while trying to read block (number).
```

An error developed while the activating process was taking place. The drive door might not be securely closed, or the drive cannot read the feature diskette.

Check the drive doors to make sure they are securely closed. *You cannot verify the feature diskette.*

If the feature still does not activate, there may be a problem with DECmate II. (See *DECmate II Owner's Manual*, EK–DECM2–OM.)

NOTE: *To use Sort with either List Processing or Math, those features must be active on your system diskette.*

3

Input Document

The input document has the information you want to sort and is organized by *records*. One kind of input document is the list document used in List Processing. (The same document is often both a Sort input document and a List Processing list document.) Sort does not change the input document.

Records

The input document consists of records. Each record contains information about *one* person or thing. For example, if the input document is a personnel file, there should be a separate record for each employee. Similarly, if the input document is an inventory list, there should be a separate record for each item in the inventory.

Each record must end with a *diamond* <> followed by two RETURNS. (A diamond is made by typing a left angle bracket <, then a right angle bracket >.) The <> marks the end of one record and the beginning of the next. Each record is made up of fields. The first record is all of the fields before the first <>. Other records are the fields between two consecutive diamonds. To move forward through the records, press ADVANCE and then the PARA key. To move backward, press BACK UP and then the PARA key.

NOTE: A single record can have as many as 2500 characters. An input document can have as many as 4000 records.

Fields

A record has one or more fields, and may have up to 2500 characters. Use Sort to rearrange a list of records on a specified field. A field consists of the *field name* typed between left < and right angle brackets > and the *field value* that is typed immediately after the right angle bracket >. Each field name must be on a separate line.

The following is an example of a list of records:

```
<last>Kadis
<first>Freeman
<co>Sine Qua
<add>155 Fourth Avenue
<city>Vestal
<state>NY
<zip>13850
<cat#>F-LQP01-KA
<pg#>13
<item#> 0074
<descrip>Mylar Ribbon
<shipping wt>1 lb.
<:unit price>42.00
<paymt>cash
<>

<last>Spell
<first>Sarah
<co>Production, Ltd.
<add>175 Inwood Avenue
<city>NY
<state>NY
<zip>10034
<cat#>F-H9850-PH
<pg#>14
<item#>T0074
<descrip>Fanfold Paper
<shipping wt>27 lbs.
<:unit price>43.00
<paymt> credit
<>
```

(continued)

```
<last>Robertson
<first>William
<co>Survivors, Inc.
<add>910 Hedge Road
<city>Campbell
<state>CA
<zip>95008
<cat#>F-LQPX2-SW
<pg#>19
<item#>A0076
<descrip>Acoustic Cover
<shipping wt>40 lbs.
<:unit price>425.00
<paymt>COD
<>

<last>Brindel
<first>Robert
<co>Span Arch, Inc.
<add>159 Colby Street
<city>Nashua
<state>NH
<zip>03063
<cat#>F-H9850-RL
<pg#>27
<item#>3009
<descrip>WP rulers - pkg. of 10
<shipping wt>.05 lbs
<:unit price>$20.00
<paymt>cash
<>

<last>Emery
<first>Charles
<co>Computaumation, Inc.
<add>608 Knoll Road
<city>Manchester
<state>NH
<zip>03101
<cat#>F-H9850-DA
<pg#>40
<item#>/008
<descrip>DECmat 4'x6'
<shipping wt>10 lbs.
<:unit price>125.00
<paymt>credit
<>
```

(continued)

```
<last>Maclean
<first>Roxanne
<co>Basics, Ltd.
<add>3708 Loam Avenue
<city>Anaheim
<state>CA
<zip>92803
<cat#>F-H9850-EB
<pg#>26
<item#>8976
<descrip>Serial Interface Switch
<shipping wt>2 lbs.
<:unit price>235.00
<paymt>COD
<>
```

Figure 5 Example Format of Records and Fields

Field Names

Decide what to name each field. Use a descriptive field name, such as <last> for last name, to identify information. Remember, short field names use less diskette space.

- Begin each field name on a new line.
- Begin each field name with a left angle bracket <. End each field name with a right angle bracket >.

  NOTE: Use angle brackets only to mark the beginning and end of every field name.
- Do not begin a field name with an exclamation point (!).
- Do not make field names more than 30 characters long.
- Type field names exactly the same way in each record. Use the same letters, capitalization, spaces, and punctuation every time you use the same field name.

Field Values

The field value is the content that goes with a specific field name.

- Each field value begins immediately after the right angle bracket > of the field name. *Spaces and other invisible characters after the right angle bracket affect the sort of all but numeric fields.*
- Each field value ends with a RETURN before the next <. If spaces occur before the RETURN, they are considered part of the field value.
- A diamond <> marks the end of the last field value in a record.
- To sort on any particular field, it must have a field name and a field value. For example, you could have an address with the field name and field value as:

```
<add>608 Knoll Road
Manchester, NH 03101
```

But, in this example, you could sort only on the address field as a whole. If, in the future, you wanted to sort on zip codes, you would have to edit your input document list to include:

```
<zip>03101
```

See Figure 5 as an example of creating a list that can sort on many different fields/keys.

Empty and Missing Fields

Sometimes, you do not have all the information needed to complete a record. For instance, you may not know the name of the state in a mailing address.

An *empty* field contains a field name, such as <state>, but no field value, such as Vermont. A *missing* field has neither a field name nor a field value.

The *sort field* or *sort key* is the field on which a record is sorted. Records sorted on empty or missing fields are grouped either at the end or the beginning of the output document. An ascending Sort lists records with empty or missing fields at the end of the output document. A descending sort lists records with empty or missing fields in the beginning of the output document.

NOTE: A field value that has only spaces (entered with the space bar or TAB key) is not an empty field. The field value may appear empty on the screen or when printed. When the field value is sorted, however, the field is ordered according to the value given to a space in the Sort Alphabet.

Numeric Fields

Numeric fields have field names that always begin with a colon : and field values that are numeric. Use numeric fields in Sort to arrange field values according to their numeric values. Numeric fields are used in List Processing to test for numeric values. (See *Using List Processing*, AA–N183A–TA.) With List Processing Math, you do math calculations on numeric fields. (See *Using Math*, AA–N186A–TA.)

Not all fields that contain numbers have numeric value. For instance, field names such as zip codes, street addresses, and dates have field values that are numbers. Such fields, however, do not have numeric field values, unless the numbers appear after a numeric field name.

Numeric Field Names. To use numeric values in the list, *type a colon : before a field name.* Note the use of the colon : to define the numeric field name, <**:unit price**>, in Figure 5.

Numeric Field Values.

- *Only* these characters are *valid* as numeric field values:
  $ ( ) * + , – . 0 1 2 3 4 5 6 7 8 9 0

  NOTE: Sort Alphabet characters—other than those listed above—are considered errors in a numeric Sort; and Sort stops if it finds an invalid numeric field. DECmate ignores all characters after a space in a numeric field value.

- Each numeric field value must have not more than 13 valid characters.
- Numeric field values with decimal points must have not more than six characters after the decimal point. (Example: 13.365785)
- Some symbols in the numeric field value are valid only in certain positions.
  - The characters $ * + ( ) . appear no more than once.
  - The characters $ * + (appear at the beginning.
  - The character) appears at the end.
  - The + sign comes first, if it appears.
  - The – sign is either first or last, if it appears.
  - The $ sign comes before the * and after any of the characters (+ or –.
  - There is one) for every (.
  - The characters ( ) and the – sign do not appear in the same field value.
  - There are no empty pairs of parentheses.
  - Use commas , as numeric separators.

Use Sort to order the numbers in a numeric field according to their numeric field values. Here is an example of two lists sorted on one key in ascending order. One list has a numeric field name and the other list does not.

Numeric Field	Non-Numeric
<:unit price>–79.00 <>	<unit price> +79.00 <>
<:unit price>7.90 <>	<unit price>–79.00 <>
<:unit price> +79.00 <>	<unit price>7.90 <>

Other Facts About Input Documents

An input document is any document that has been formatted with field names and field values. It is created, edited and printed in the same way as any other document. Control commands and invisible characters can be included.

Rulers

Use only *one* ruler in the input document. If Sort finds another ruler in the input document, the following message appears on the screen:

```
Warning - List contains multiple rulers
```

This is an informational message, and does not stop the Sort. Sort ignores additional rulers. Only the first ruler in the input document determines the format of the output document. This ruler should be set *before* your first record.

NOTE: If you need multiple rulers in the sorted list, you should edit the output document to be sure you put the rulers where you want them.

Control Command Markers

You may wish to type a paragraph or two in the input document to alert another user editing the list. This note may describe the purpose of the list, the field names used, or any other necessary information. Place any text, not part of a record, before the first record at the beginning of the input document.

To include text that is not part of a record:

1. Press Gold CMND. DECmate inserts a START CONTROL marker.
2. Type the word COMMENT and then press RETURN.
3. Type the text you wish to insert and press RETURN.
4. Press Gold CMND. DECmate inserts an END CONTROL marker.

Text placed between control command markers with the keyword COMMENT appears in the output list; it does not appear if the input or output document is printed.

NOTE: Be sure to insert the START CONTROL marker at the very top of the document.

Exercise 1: Create an Input Document

To help you learn Sort, complete the exercises that appear at the end of Chapters 3, 4, and 5. For this first exercise, create an input document. Put this document on an initialized diskette. The input document you create will look similar to the input list in this chapter. But, your input document will have 9 fields; not 14 fields.

1 Create the input document and name it *Customer List.*

2 Type the following fields into your input document:

```
<last>
<first>
<add>
<city>
<state>
<zip>
<item#>
<:unit price>
<paymt>
<>
```

(Press RETURN twice after typing the diamond <>.)

3 You will need six records for this exercise. To avoid typing the field names five more times, try the following:

Press BACK UP, PARA, SEL, PARA, Gold CUT.
Press PASTE five times. You will have 6 records with field names only.

4 Place your cursor at the top of the input document. Use ADVANCE <> to move the cursor to the end of each field name. Fill in the information so that your records look exactly like this:

```
<last>Kadis
<first>Freeman
<add>155 Fourth Avenue
<city>Vestal
<state>NY
<zip>13850
<item#> 0074
```

(The space before **0074** is intentional.)

```
<:unit price>42.00
<paymt>cash
<>

<last>Spell
<first>Sarah
<add>175 Inwood Avenue
<city>NY
<state>NY
<zip>10034
<item#>T0074
<:unit price>43.00
<paymt> credit
```

(The space before **credit** is intentional.)

```
<>


<last>Robertson
<first>William
<add>910 Hedge Road
<city>Campbell
<state>CA
<zip>95008
<item#>A0076
<:unit price>425.00
<paymt>COD
<>
```

(continued)

```
<last>Brindel
<first>Robert
<add>159 Colby Street
<city>Nashua
<state>NH
<zip>03063
<item#>3009
<:unit price>$20.00
<paymt>cash
<>

<last>Emery
<first>Charles
<add>608 Knoll Road
<city>Manchester
<state>NH
<zip>03101
<item#>/008
<:unit price>125.00
<paymt>credit
<>

<last>Maclean
<first>Roxanne
<add>3708 Loam Avenue
<city>Anaheim
<state>CA
<zip>92803
<item#>8976
<:unit price>235.00
<paymt>COD
<>
```

5 File the *Customer List Input Document.*

6 Print it. You will sort this list in another exercise. You can compare this printed document with the sorted lists.

4

Sort Specification Document

To Create a Sort Specification:

1 Select Create (**C**) from the Main Menu.

2 Name the document.

3 Type the sort field(s)/key(s) and the sort order(s).

4 File the document.

In the sort specification document, specify how you want the input document sorted. The sort specification has:

- The name(s) of the field(s) to be sorted
- The *sort order* for each key — ascending or descending

The sort order is either an ascending order (same order as the Sort Alphabet) or a descending order (reverse order of the Sort Alphabet).

When you create sort specifications:

- Use either uppercase or lowercase letters.
- Type field names *exactly* as they appear in the input document.

Single-Key Sort

In *Single-Key Sort*, you specify one sort field/key and one sort order. It is a one-line document, like these:

Format 1:

```
SORT ON <field name> IN ASCENDING ORDER
```

OR

Format 2:

```
SORT ON <field name> IN DESCENDING ORDER
```

Figure 6 Single-Key Sort Specification Formats

Multikey Sort

In *Multikey Sort*, you can specify as many as 12 keys and more than one order. It is more than a one-line document. The first field/key named is called the *primary key*. Use the primary key to specify the order of the output document.

If Sort is to list states and cities in either ascending or descending order, make <**state**> the *primary key* because state is a larger unit than city. Then, specify <**city**> as the *second field*. Sort organizes the cities within the larger category, states. If you want to sort streets as well, make

<street> the *third field.* A street is a smaller unit than both a city and a state. Organize fields for sort specifications so that larger units come before smaller ones; the largest unit sorted should be the primary key.

The multikey sort specification shown in Figure 7 is organized this way. Note the word *and* at the end of a line when there is more than one statement.

Format:

```
SORT ON <field name> IN ASCENDING ORDER and

SORT ON <field name> IN DESCENDING ORDER and

SORT ON <field name> IN ASCENDING ORDER
```

Figure 7 Multikey Sort Specification Formats

Examples of Sorted Documents

When the input document is sorted, the first character of each field value for the specified field name is examined. The position of this first character in the Sort Alphabet determines the field value's placement in the output document. If two field values begin with the same character, the second character is examined, and so on.

Example 1

The following is an example of a list sorted in ascending order on two keys, <**state**> and <**last**>. Since <**state**> is the primary key, this key is sorted first. Then the key <**last**> is sorted.

With this sort specification:

```
SORT ON <state> IN ASCENDING ORDER AND

SORT ON <last> IN ASCENDING ORDER
```

This is how the output document will look:

```
<last>Maclean
<first>Roxanne
<co>Basics, Ltd.
<add>3708 Loam Avenue
<city>Anaheim
<state>CA
<zip>92803
<cat#>F-H9850-EB
<pg#>26
<item#>8976
<descrip>Serial Interface Switch
<shipping wt>2 lbs.
<:unit price>$235.00
<COD>Y
<>
```

(continued)

```
<last>Robertson
<first>William
<co>Survivors, Inc.
<add>910 Hedge Road
<city>Campbell
<state>CA
<zip>95008
<cat#>F-LQPX2-SW
<pg#>19
<item#>A0076
<descrip>Acoustic Cover
<shipping wt>40 lbs.
<:unit price>425.00
<COD>Y
<>

<last>Brindel
<first>Robert
<co>Span Arch, Inc.
<add>159 Colby Street
<city>Nashua
<state>NH
<zip>03063
<cat#>F-H9850-RL
<pg#>27
<item#>3009
<descrip>WP rulers - pkg. of 10
<shipping wt>.05 lbs
<:unit price>$20.00
<cash>Y
<>

<last>Emery
<first>Charles
<co>Computaumation, Inc.
<add>608 Knoll Road
<city>Manchester
<state>NH
<zip>03101
<cat#>F-H9850-DA
<pg#>40
<item#>/008
<descrip>DECmat 4'x6'
<shipping wt>10 lbs.
<:unit price>125.00
<credit>Y
<>
```

(continued)

```
<last>Kadis
<first>Freeman
<co>Sine Qua
<add>155 Fourth Avenue
<city>Vestal
<state>NY
<zip>13850
<cat#>F-LQP01-KA
<pg#>13
<item#> 0074
<descrip>Mylar Ribbon
<shipping wt>1 lb.
<:unit price>42.00
<cash>Y
<>

<last>Spell
<first>Sarah
<co>Production, Ltd.
<add>175 Inwood Avenue
<city>NY
<state>NY
<zip>10034
<cat#>F-H9850-PH
<pg#>14
<item#>T0074
<descrip>Fanfold Paper
<shipping wt>27 lbs.
<:unit price>43.00
<credit>Y
<>
```

Figure 8 List Sorted on <state> and <last> in Ascending Order

Example 2

In the sorted list of records that follows (Figure 9), some item numbers **<item#>** start with letters, others with numbers, still others with symbols or spaces. Refer to the Sort Alphabet to see how Sort orders special symbols and numbers in ascending order.

With this sort specification:

```
SORT ON <item#> IN ASCENDING ORDER
```

This is how the output document will look:

```
<last>Robertson
<first>William
<co>Survivors, Inc.
<add>910 Hedge Road
<city>Campbell
<state>CA
<zip>95008
<cat#>F-LQPX2-SW
<pg#>19
<item#>A0076
<descrip>Acoustic Cover
<shipping wt>40 lbs.
<:unit price>425.00
<COD>Y
<>
```

(continued)

```
<last>Spell
<first>Sarah
<co>Production, Ltd.
<add>175 Inwood Avenue
<city>NY
<state>NY
<zip>10034
<cat#>F-H9850-PH
<pg#>14
<item#>T0074
<descrip>Fanfold Paper
<shipping wt>27 lbs.
<:unit price>43.00
<credit>Y
<>

<last>Kadis
<first>Freeman
<co>Sine Qua
<add>155 Fourth Avenue
<city>Vestal
<state>NY
<zip>13850
<cat#>F-LQP01-KA
<pg#>13
<item#> 0074
<descrip>Mylar Ribbon
<shipping wt>1 lb.
<:unit price>42.00
<cash>Y
<>

<last>Emery
<first>Charles
<co>Computaumation, Inc.
<add>608 Knoll Road
<city>Manchester
<state>NH
<zip>03101
<cat#>F-H9850-DA
<pg#>40
<item#>/008
<descrip>DECmat 4'x6'
<shipping wt>10 lbs.
<:unit price>125.00
<credit>Y
<>
```

(continued)

```
<last>Brindel
<first>Robert
<co>Span Arch, Inc.
<add>159 Colby Street
<city>Nashua
<state>NH
<zip>03063
<cat#>F-H9850-RL
<pg#>27
<item#>3009
<descrip>WP rulers - pkg. of 10
<shipping wt>.05 lbs
<:unit price>$20.00
<cash>Y
<>

<last>Maclean
<first>Roxanne
<co>Basics, Ltd.
<add>3708 Loam Avenue
<city>Anaheim
<state>CA
<zip>92803
<cat#>F-H9850-EB
<pg#>26
<item#>8976
<descrip>Serial Interface Switch
<shipping wt>2 lbs.
<:unit price>$235.00
<COD>Y
<>
```

Figure 9 List Sorted on <item#> in Ascending Order

Example 3

In the following example, the list is sorted on two keys. The primary key is <**paymt**> and the sort is descending. The secondary key is <**last**> and the sort is ascending.

Look at the first two records in the list. The blank space between <**paymt**> and **credit** brings that record to the beginning of the list. (See the Sort Alphabet on page 4.) According to the sort specification, **Emery** should come before **Spell**. But, the **primary key** is <paymt>, and that takes precedence over the second key.

With this sort specification:

```
SORT ON <paymt> IN DESCENDING ORDER AND
SORT ON <last> IN ASCENDING ORDER
```

This is how the output document will look:

```
<last>Spell
<first>Sarah
<co>Production, Ltd.
<add>175 Inwood Avenue
<city>NY
<state>NY
<zip>10034
<cat#>F-H9850-PH
<pg#>14
<item#>T0074
<descrip>Fanfold Paper
<shipping wt>27 lbs.
<:unit price>43.00
<paymt> credit
<>
```

```
<last>Emery
<first>Charles
<co>Computaumation, Inc.
<add>608 Knoll Road
<city>Manchester
<state>NH
<zip>03101
<cat#>F-H9850-DA
<pg#>40
<item#>/008
<descrip>DECmat 4'x6'
<shipping wt>10 lbs.
<:unit price>125.00
<paymt>credit
<>

<last>Maclean
<first>Roxanne
<co>Basics, Ltd.
<add>3708 Loam Avenue
<city>Anaheim
<state>CA
<zip>92803
<cat#>F-H9850-EB
<pg#>26
<item#>8976
<descrip>Serial Interface Switch
<shipping wt>2 lbs.
<:unit price>$235.00
<paymt>COD
<>

<last>Robertson
<first>William
<co>Survivors, Inc.
<add>910 Hedge Road
<city>Campbell
<state>CA
<zip>95008
<cat#>F-LQPX2-SW
<pg#>19
<item#>A0076
<descrip>Acoustic Cover
<shipping wt>40 lbs.
<:unit price>425.00
<paymt>COD
<>
```

(continued)

```
<last>Brindel
<first>Robert
<co>Span Arch, Inc.
<add>159 Colby Street
<city>Nashua
<state>NH
<zip>03063
<cat#>F-H9850-RL
<pg#>27
<item#>3009
<descrip>WP rulers - pkg. of 10
<shipping wt>.05 lbs
<:unit price>$20.00
<paymt>cash
<>

<last>Kadis
<first>Freeman
<co>Sine Qua
<add>155 Fourth Avenue
<city>Vestal
<state>NY
<zip>13850
<cat#>F-LQP01-KA
<pg#>13
<item#> 0074
<descrip>Mylar Ribbon
<shipping wt>1 lb.
<:unit price>42.00
<paymt>cash
<>
```

Figure 10 List Sorted on <paymt> in Descending Order and <last> in Ascending Order

Example 4

The following figure uses a *numeric field*. The list is arranged in descending order according to the numeric value of the <**:unit price**> field.

With this sort specification:

```
SORT ON <:unit price> IN DESCENDING ORDER
```

This is how the output document will look:

```
<last>Robertson
<first>William
<co>Survivors, Inc.
<add>910 Hedge Road
<city>Campbell
<state>CA
<zip>95008
<cat#>F-LQPX2-SW
<pg#>19
<item#>A0076
<descrip>Acoustic Cover
<shipping wt>40 lbs.
<:unit price>425.00
<paymt>COD
<>

<last>Maclean
<first>Roxanne
<co>Basics, Ltd.
<add>3708 Loam Avenue
<city>Anaheim
<state>CA
<zip>92803
<cat#>F-H9850-EB
<pg#>26
<item#>8976
<descrip>Serial Interface Switch
<shipping wt>2 lbs.
<:unit price>$235.00
<paymt>COD
<>
```

(continued)

```
<last>Emery
<first>Charles
<co>Computaumation, Inc.
<add>608 Knoll Road
<city>Manchester
<state>NH
<zip>03101
<cat#>F-H9850-DA
<pg#>40
<item#>/008
<descrip>DECmat 4'x6'
<shipping wt>10 lbs.
<:unit price>125.00
<paymt>credit
<>

<last>Spell
<first>Sarah
<co>Production, Ltd.
<add>175 Inwood Avenue
<city>NY
<state>NY
<zip>10034
<cat#>F-H9850-PH
<pg#>14
<item#>T0074
<descrip>Fanfold Paper
<shipping wt>27 lbs.
<:unit price>43.00
<paymt>credit
<>

<last>Kadis
<first>Freeman
<co>Sine Qua
<add>155 Fourth Avenue
<city>Vestal
<state>NY
<zip>13850
<cat#>F-LQP01-KA
<pg#>13
<item#> 0074
<descrip>Mylar Ribbon
<shipping wt>1 lb.
<:unit price>42.00
<paymt>cash
<>
```

(continued)

```
<last>Brindel
<first>Robert
<co>Span Arch, Inc.
<add>159 Colby Street
<city>Nashua
<state>NH
<zip>03063
<cat#>F-H9850-RL
<pg#>27
<item#>3009
<descrip>WP rulers - pkg. of 10
<shipping wt>.05 lbs
<:unit price>$20.00
<paymt>cash
<>
```

Figure 11 List Sorted on <:unit price> in Descending Order

Exercise 2: Create Sort Specifications

In this exercise you will create four sort specifications. Complete the *Customer List* input document from Exercise 1 before you start this exercise. Add these specifications to the same diskette you used in Exercise 1.

1. Create a document and name it *State Spec*. Type a sort specification to produce a sorted list with states from lowest to highest values and zip codes from highest to lowest values, according to the Sort Alphabet.

   File the document.

2. Create another document and name it *Numeric Spec*. Type a sort specification to produce a sorted list with numeric fields from highest to lowest values, according to the Sort Alphabet.

   File the document.

3. Create a third document and name it *Item Spec*. Type a sort specification to produce a sorted list with item numbers from lowest to highest values, according to the Sort Alphabet.

   File the document.

4 Create a fourth document and name it *Payment Spec*. Type a sort specification to produce a sorted list with payment from highest to lowest, and last names from highest to lowest values, according to the Sort Alphabet.

  File the document.

These sort specifications will be used when we run Sort (Chapter 5).

Solutions to Exercise 2

Type the specifications in uppercase or lowercase letters. If you'd like, put an extra blank line in specifications with more than one sort key. The field name must be typed *exactly* as it appears in the input document.

1
```
Sort on <state> in ascending order and
Sort on <zip> in descending order
```

2
```
Sort on <:unit price> in descending order
```

3
```
Sort on <item#> in ascending order
```

4
```
Sort on <paymt> in descending order and
Sort on <last> in descending order
```

5

Running Sort

To Run Sort:

1 Type **SR** from the Main Menu.

2 Type the name of the sort specification document.

3 Type the name of the input document.

4 Type the name of the output document.

5 Type GO to begin Sort.

Sort Documents

Use three documents to run Sort:

- An *input document* (list to be sorted).
- A *sort specification* document (operator's instructions to DECmate on how to sort).
- An *output document* (list after it is sorted).

Complete the input and sort specification documents before selecting the Sort option (**SR**) from the Main Menu. The sort specification does not need to be on the same diskette as the input document. It can be on a diskette in *any* drive on the system. If you have a two-drive system, the sort specification can be on the system diskette.

The output document does not need to be ready before selecting **SR**. When Sort asks for the name of the output document, you can:

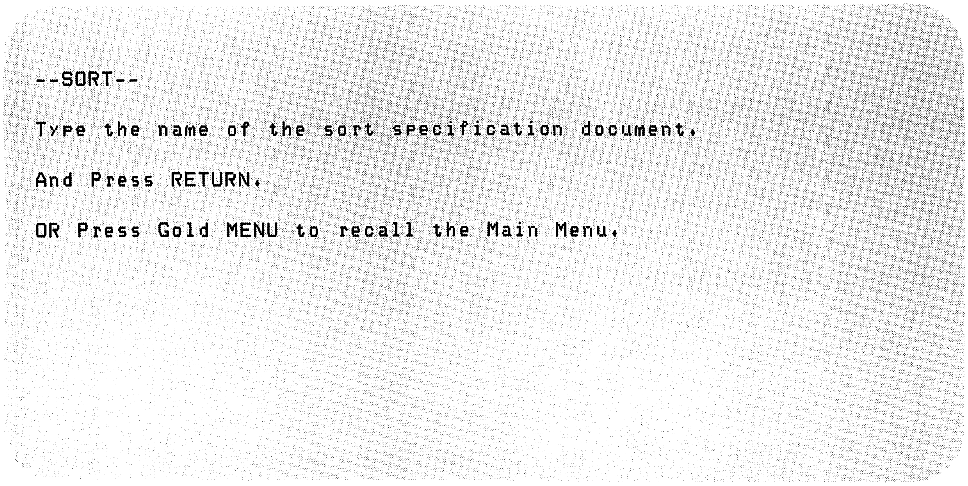
- Give the name of a document that already exists (the sorted material is put into this document).
- Give the new name to the document that you are creating with Sort.

Beginning the Sort Process

The diskettes in the drives should contain the input and sort specification documents. Write down the document names or numbers for both these documents. *You cannot run Sort if the printer is busy.* At the Main Menu, type **SR** and press RETURN.

Sort Specification

The first display requests the name of the sort specification. (See Figure 12.)

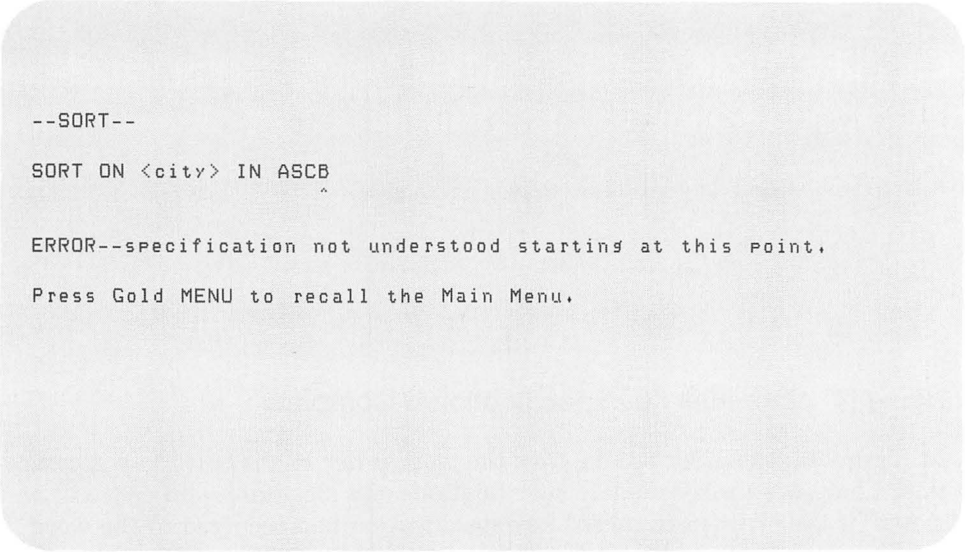


```
--SORT--

Type the name of the sort specification document.

And Press RETURN.

OR Press Gold MENU to recall the Main Menu.
```

Figure 12 Display Requesting the Sort Specification

When this display appears, type in the name or number of the specification document. If an incorrect name or number has been typed or the specification is not on a diskette in any of the drives, DECmate cannot locate the sort specification. The screen displays an error message.

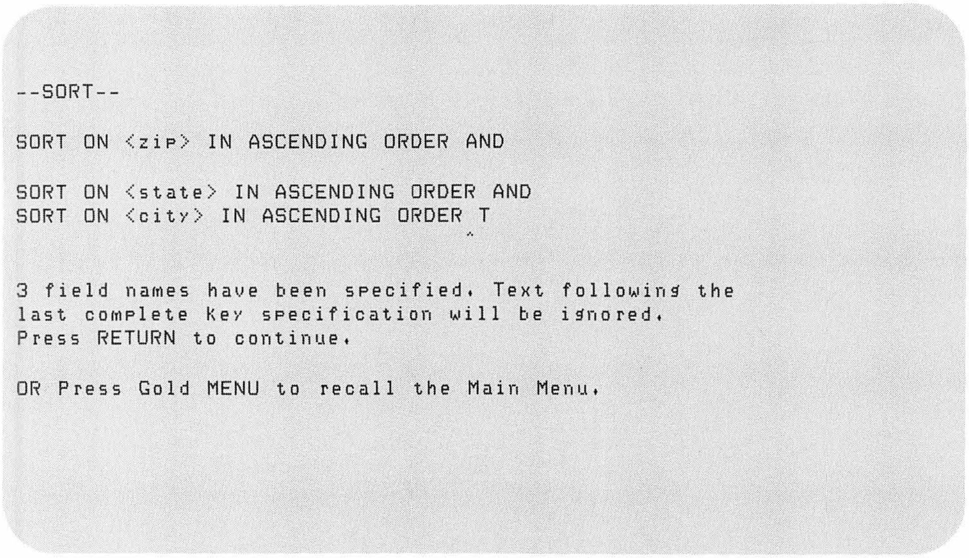
When the document name is correct, the system examines the sort specification for errors. If it finds an error, the screen displays an error message. A caret (^) points to the specific error. (See Figures 13 and 14 for sample error displays.)



```
--SORT--

SORT ON <city> IN ASCB
                     ^

ERROR--specification not understood starting at this point.

Press Gold MENU to recall the Main Menu.
```

Figure 13   Sort Specification Error

If the error occurs after the word *order*, DECmate tries to use the information up to the error. In this case, a message similar to the one in Figure 14 appears.



```
--SORT--

SORT ON <zip> IN ASCENDING ORDER AND

SORT ON <state> IN ASCENDING ORDER AND
SORT ON <city> IN ASCENDING ORDER T
                                 ^

3 field names have been specified. Text following the
last complete key specification will be ignored.
Press RETURN to continue.

OR Press Gold MENU to recall the Main Menu.
```

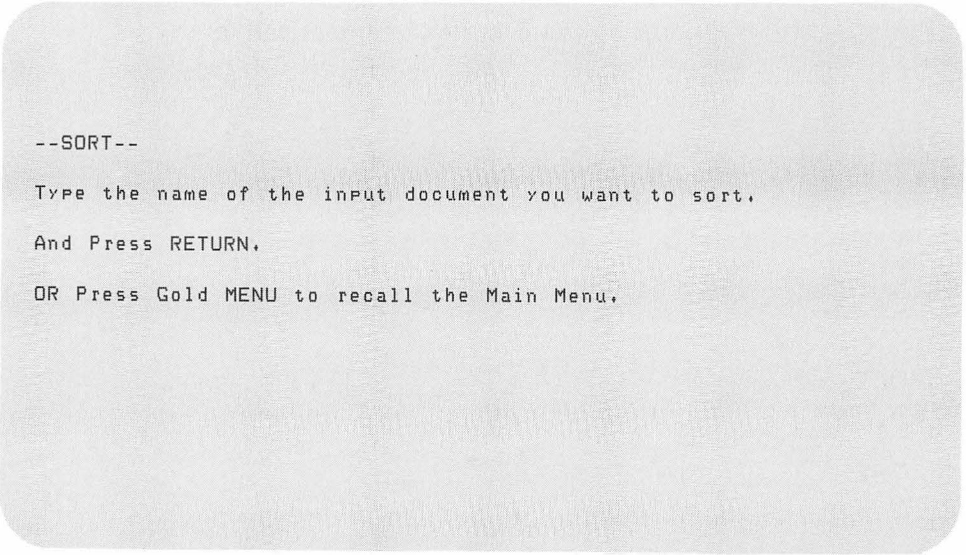
Figure 14 Error After Key Specification Is Complete

In Figure 14, the error occurs *after* the word *order* in the third key specification. There are *three* complete specifications and zip, state, and city will be sorted. If the error in the third key specification had occurred in the word *ascending*, there would have been only *two* complete key specifications. (The caret (^) would have appeared at the misspelled character in the word or words before *order*.)

When an error has been identified, end Sort by typing Gold MENU. Correct and file the specification document. Select **SR** from the Main Menu and run Sort again.

Input Document

If the sort specification is correct, you see a display, shown in Figure 15, asking for the name of the input document.



```
--SORT--

Type the name of the input document you want to sort.

And Press RETURN.

OR Press Gold MENU to recall the Main Menu.
```

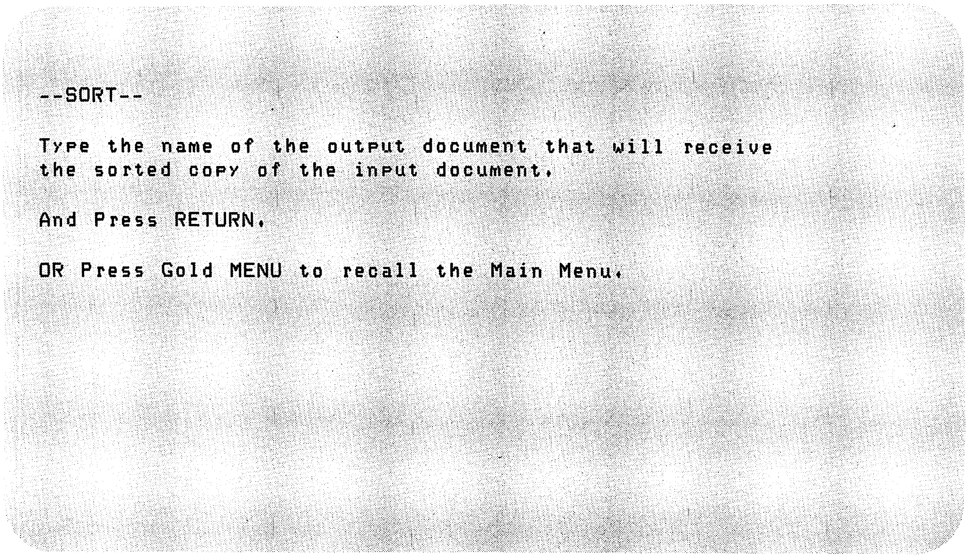
Figure 15 Display Requesting the Input Document

The input document must be on a diskette in a drive on your system. If an incorrect name or number was entered, or if there is no such document, an error message appears on the DECmate terminal screen.

Output Document

After the input document has been correctly named, the system requests the name of the output document (Figure 16).

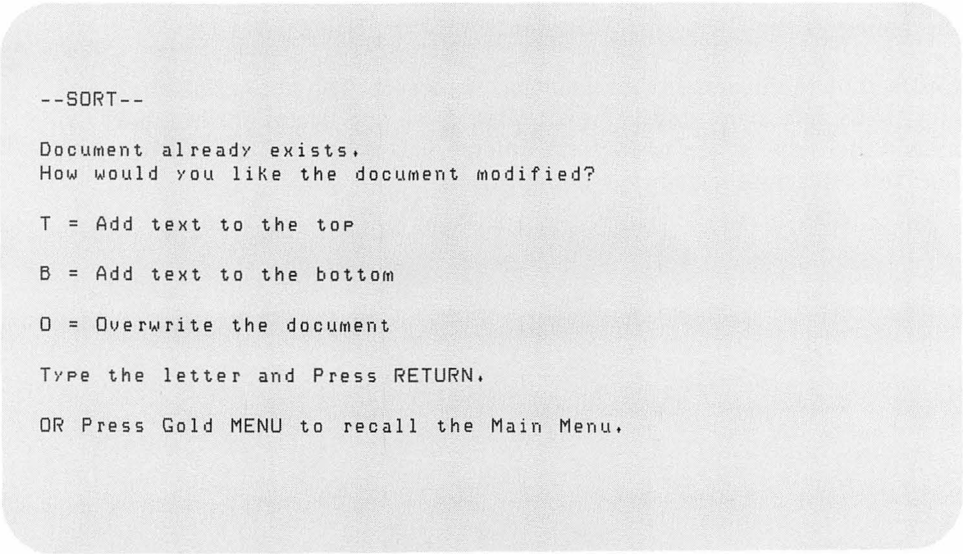
To create a *new* output document, type its name when you see this display (DECmate will create the output document automatically):



```
--SORT--

Type the name of the output document that will receive
the sorted copy of the input document.

And Press RETURN.

OR Press Gold MENU to recall the Main Menu.
```

Figure 16 Display Requesting the Output Document

If a document with the same name already exists, and you want to add the sorted records to it, you see the display in Figure 17.



```
--SORT--

Document already exists.
How would you like the document modified?

T = Add text to the top

B = Add text to the bottom

O = Overwrite the document

Type the letter and Press RETURN.

OR Press Gold MENU to recall the Main Menu.
```

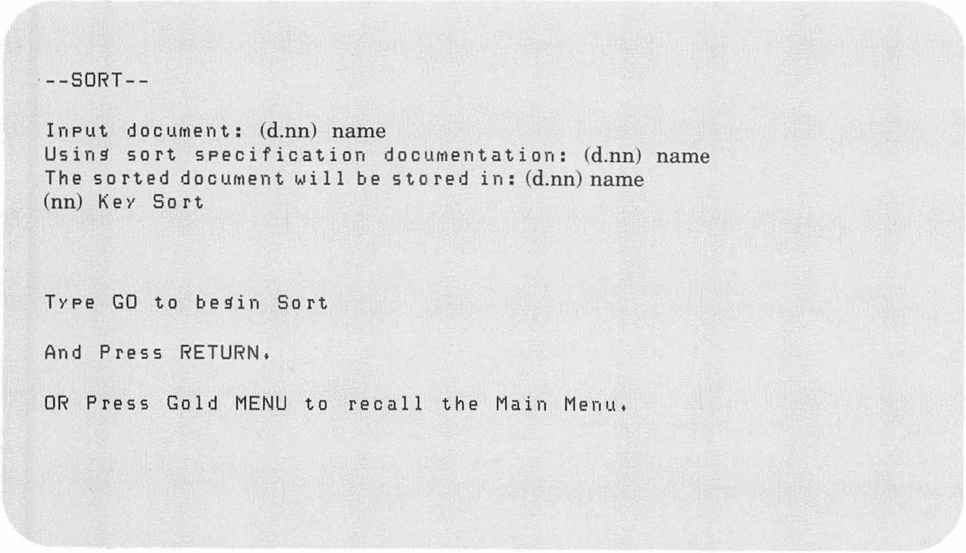
Figure 17 Menu to Modify Output Document

Modify the document by making a selection from the menu. Be sure the diskette containing the output document has enough blocks remaining to store the newly sorted output document. See page 48.

Confirming Sort Document Names

After you specify the output document, the screen changes. A display with the names of the three sort documents appears. See Figure 18.

Check that the document information is correct. The abbreviation *(d.nn)* after each document stands for diskette drive and document number; *name* means the name given to each document. The abbreviation *(nn)* before *Key Sort* tells the number of keys being sorted.



```
--SORT--

Input document: (d.nn) name
Using sort specification documentation: (d.nn) name
The sorted document will be stored in: (d.nn) name
(nn) Key Sort


Type GO to begin Sort

And Press RETURN.

OR Press Gold MENU to recall the Main Menu.
```

Figure 18 Display Confirming Sort Documents

If you want to change the input document, the specification document, or the output document, press Gold MENU. Sort stops. To start Sort again, select **SR** from the Main Menu.

To run Sort, type GO and press RETURN.

Sorting a List

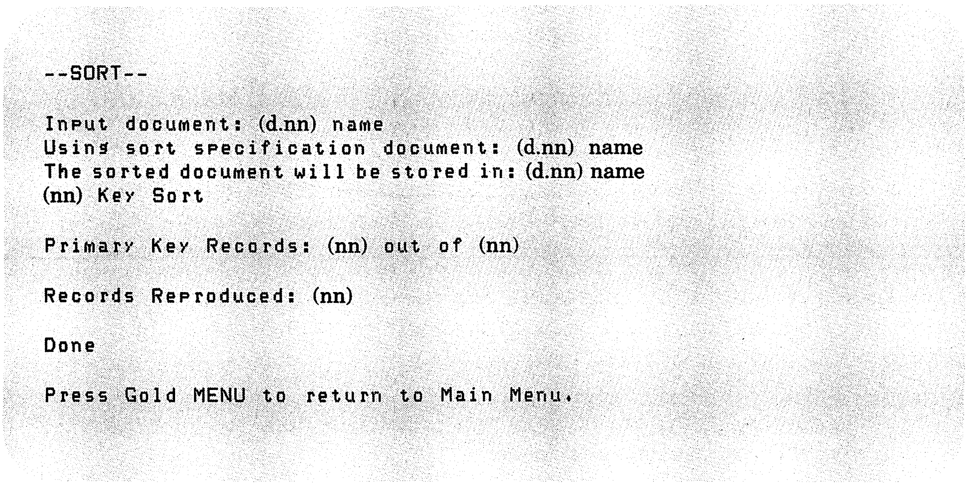
When Sort begins, *working* appears on the screen.

While Sort is in progress, the input document is checked for conditions that may affect the output document. A message appears on the screen, identifying the conditions that may interfere with the Sort process. See Chapter 6 for a complete list of messages.

NOTE: To stop the Sort process—at any time—press Gold HALT.

When Sort is complete (Figure 19), you see this additional information on the display:

- The number of *Primary Key Records.* The first number is a running tally of records with the first sort field. The second number is the total number of records in the input document.
- The number of *Records Reproduced.* This number should match the total number of records in the input document.
- *Done.* This tells you Sort is completed.



```
--SORT--

Input document: (d.nn) name
Using sort specification document: (d.nn) name
The sorted document will be stored in: (d.nn) name
(nn) Key Sort

Primary Key Records: (nn) out of (nn)

Records Reproduced: (nn)

Done

Press Gold MENU to return to Main Menu.
```

Figure 19 Sort Completed Display

To run Sort again, return to the Main Menu and select SR.

Stopping Sort

To stop Sort at any time, press Gold HALT. Pressing Gold HALT replaces *working* with *paused* on the display. You may either cancel or continue the Sort.

To cancel Sort, press Gold MENU.

To continue Sort, press RETURN.

Output Document Messages

Size of Output Document

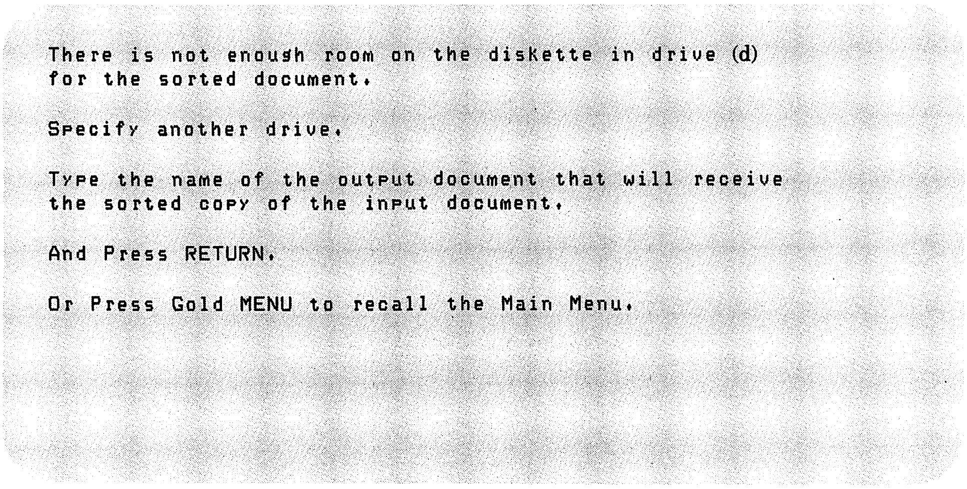
The diskette that is going to receive the output document *must* have enough room to receive the sorted input document. If the diskette doesn't have *at least 16 more blocks* than the number of blocks in the input document, use another diskette.

To be sure of using the right diskette for the output document:

1. Check the index of the input document's diskette. Make a note of the number of blocks in the input document.
2. Check the index of the output document diskette. Make sure that there are at least 16 more blocks on that diskette.

If you haven't followed this procedure and the output document diskette doesn't have enough room to receive the sorted input document, your DECmate displays one of these three screens:

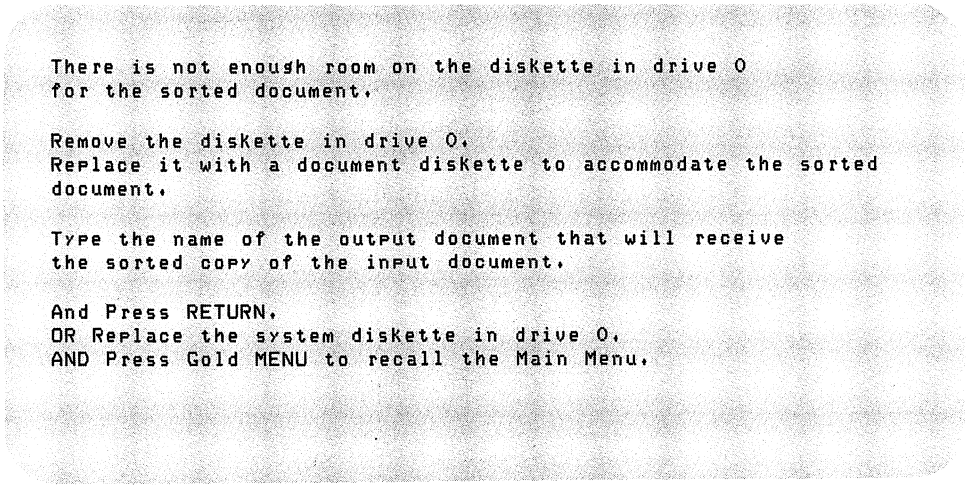
- The display in Figure 20 tells you to select a diskette on a different drive for your output document.



```
There is not enough room on the diskette in drive (d)
for the sorted document.

Specify another drive.

Type the name of the output document that will receive
the sorted copy of the input document.

And Press RETURN.

Or Press Gold MENU to recall the Main Menu.
```

Figure 20 Display Requesting a Different Diskette Drive

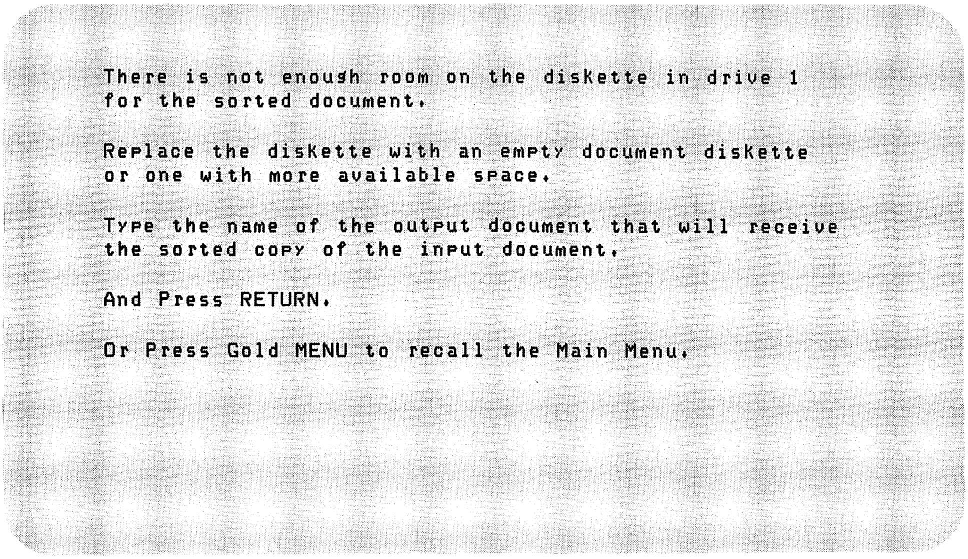
- If the system diskette was selected, and it does not have enough room, Sort asks to replace the system diskette with a *document diskette*. The message in Figure 21 appears:



```
There is not enough room on the diskette in drive 0
for the sorted document.

Remove the diskette in drive 0.
Replace it with a document diskette to accommodate the sorted
document.

Type the name of the output document that will receive
the sorted copy of the input document.

And Press RETURN.
OR Replace the system diskette in drive 0.
AND Press Gold MENU to recall the Main Menu.
```

Figure 21 Display Requesting a Document Diskette in Drive 0

- On a two-drive system, if the input document is on the system diskette (drive 0) and the document diskette in drive 1 is full, then the display in Figure 22 appears:



```
There is not enough room on the diskette in drive 1
for the sorted document.

Replace the diskette with an empty document diskette
or one with more available space.

Type the name of the output document that will receive
the sorted copy of the input document.

And press RETURN.

Or press Gold MENU to recall the Main Menu.
```

Figure 22 Display Requesting Replacement of Full Diskette with Another Document Diskette

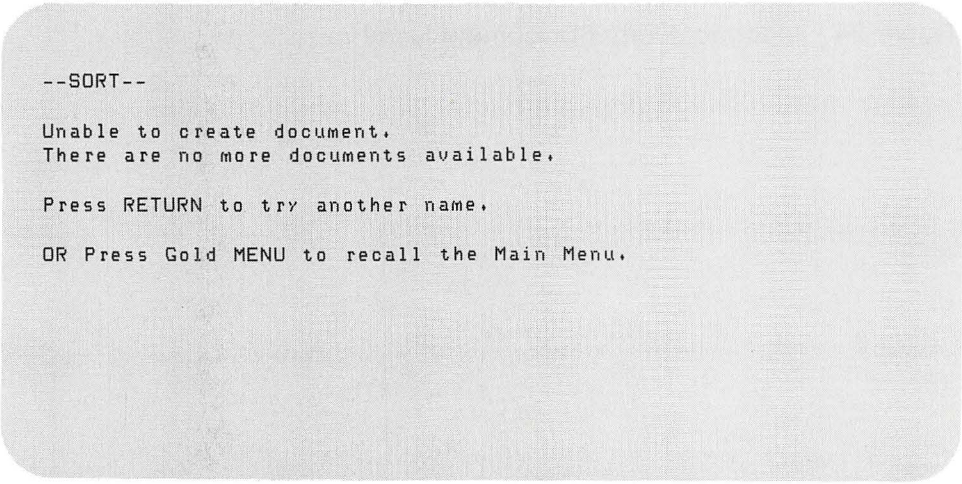
- Instead of selecting different drives or diskettes, delete documents that you don't need. Remember to delete enough documents to provide the blocks needed for the output document.

Table 1 What to Do in a Two-Drive System When an Output Document Will Not Fit

Drive # with Input Document	Drive # with Output Document	Action to Be Taken
0	0	Specify another drive. (Drive 1) See Figure 20.
0	1	Replace document diskette in drive 1. See Figure 22.
1	0	Replace system diskette in drive 0. See Figure 21.
1	1	Specify another drive. (Drive 0) See Figure 20.

Additional Output Document Messages

When you are creating an output document on a diskette that contains 200 documents, the message in Figure 23 appears:

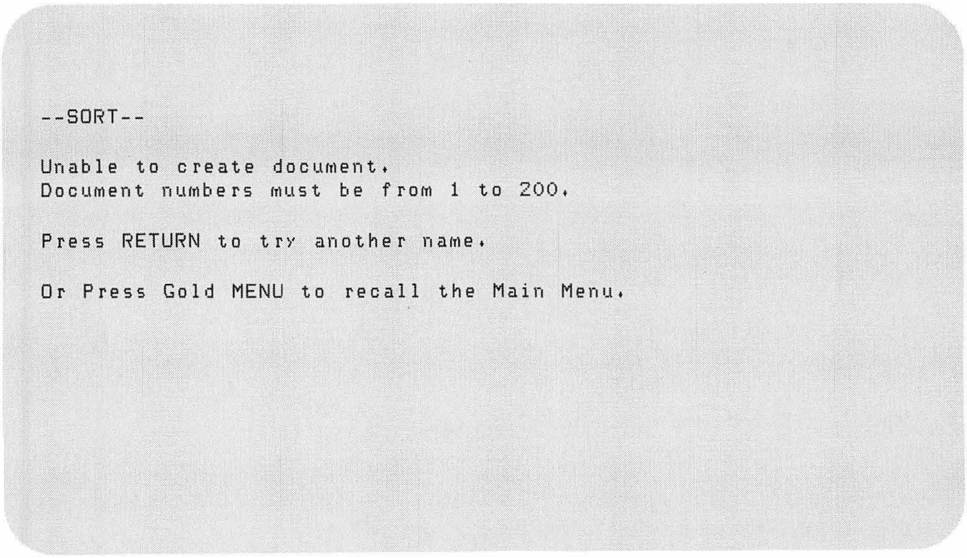


```
--SORT--

Unable to create document.
There are no more documents available.

Press RETURN to try another name.

OR Press Gold MENU to recall the Main Menu.
```

Figure 23 Output Document Diskette Is Full

Press RETURN to try a document name that already exists or cancel Sort and return to the Main Menu.

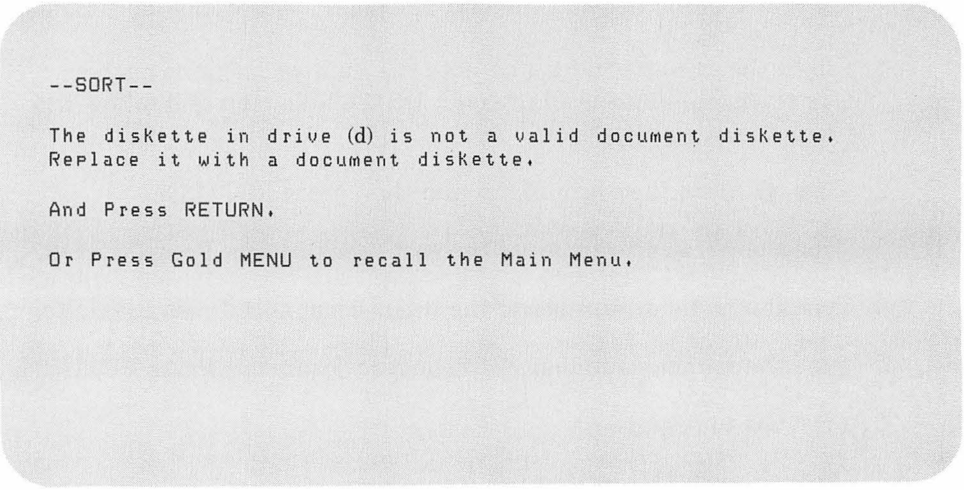
When creating an output document by number AND that number is larger than 200, the message in Figure 24 appears:



```
--SORT--

Unable to create document.
Document numbers must be from 1 to 200.

Press RETURN to try another name.

Or Press Gold MENU to recall the Main Menu.
```

Figure 24 Incorrect Output Document Number

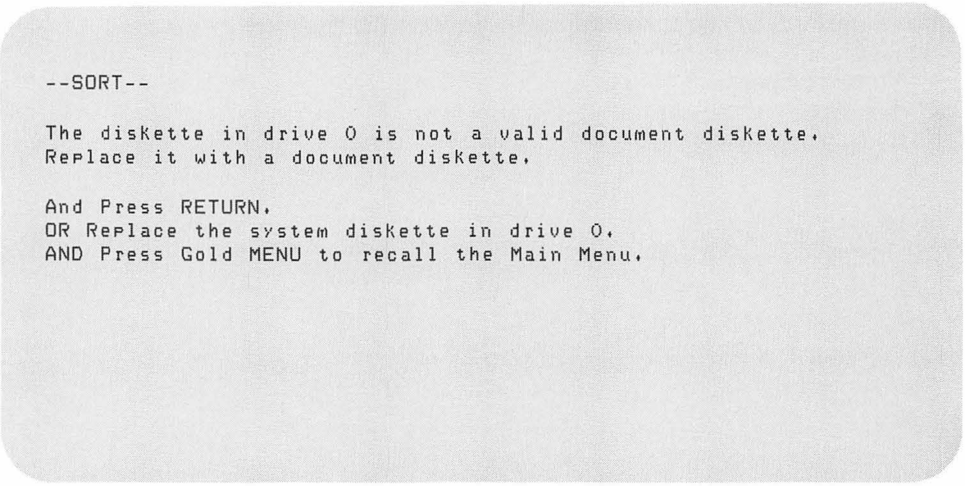
The message in Figure 25 appears when you have selected the wrong diskette to receive the sorted list. (Examples of wrong diskettes are optional feature diskettes and diskettes that are not initialized.)



```
--SORT--

The diskette in drive (d) is not a valid document diskette.
Replace it with a document diskette.

And Press RETURN.

Or Press Gold MENU to recall the Main Menu.
```

Figure 25 Diskette to Receive Output Document Is Not Valid

The message in Figure 26 appears when the output document diskette in drive 0 is not valid. (A diskette that is not initialized is not valid.)



```
--SORT--

The diskette in drive 0 is not a valid document diskette.
Replace it with a document diskette.

And Press RETURN.
OR Replace the system diskette in drive 0.
AND Press Gold MENU to recall the Main Menu.
```

Figure 26 Document Diskette in Drive 0 Is Not Valid

Exercise 3: Running Sort

When you have completed Exercises 1 and 2, sort the *Customer List.* Use the diskette that has the list and the four selection specification documents.

1. Check the diskette index and note the number or name of the *Customer List* and the *State Spec.* Do the following and follow the prompts where necessary:
2. Type **SR** from the Main Menu and then press RETURN.
3. Type the name or number of the sort specification. Press RETURN.
4. Type the name or number of the input document. Press RETURN.
5. Type the name or number of the output document. Press RETURN.
6. Type GO to begin Sort.
7. Go back to the Main Menu.
8. Print your output document.

Repeat these eight steps for the other three specifications. Use a different sort specification each time you run Sort. If you named the sort specifications according to the instructions in Exercise 2, they are:

Numeric Spec
Item Spec
Payment Spec

Output Results

1 Running Sort with the *State Spec*, the output document should look like the following:

```
<last>Robertson
<first>William
<add>910 Hedge Road
<city>Campbell
<state>CA
<zip>95008
<item#>A0076
<:unit price>425.00
<paymt>COD
<>

<last>Maclean
<first>Roxanne
<add>3708 Loam Avenue
<city>Anaheim
<state>CA
<zip>92803
<item#>8976
<:unit price>$235.00
<paymt>COD
<>

<last>Emery
<first>Charles
<add>608 Knoll Road
<city>Manchester
<state>NH
<zip>03101
<item#>/008
<:unit price>125.00
<paymt>credit
<>
```

(continued)

```
<last>Brindel
<first>Robert
<add>159 Colby Street
<city>Nashua
<state>NH
<zip>03063
<item#>3009
<:unit price>$20.00
<paymt>cash
<>

<last>Kadis
<first>Freeman
<add>155 Fourth Avenue
<city>Vestal
<state>NY
<zip>13850
<item#> 0074
<:unit price>42.00
<paymt>cash
<>

<last>Spell
<first>Sarah
<add>175 Inwood Avenue
<city>NY
<state>NY
<zip>10034
<item#>T0074
<:unit price>43.00
<paymt> credit
<>
```

2 Running Sort with the *Numeric Spec*, the output document should look like the following:

```
<last>Robertson
<first>William
<add>910 Hedge Road
<city>Campbell
<state>CA
<zip>95008
<item#>A0076
<:unit price>425.00
<paymt>COD
<>

<last>Maclean
<first>Roxanne
<add>3708 Loam Avenue
<city>Anaheim
<state>CA
<zip>92803
<item#>8976
<:unit price>$235.00
<paymt>COD
<>

<last>Emery
<first>Charles
<add>608 Knoll Road
<city>Manchester
<state>NH
<zip>03101
<item#>/008
<:unit price>125.00
<paymt>credit
<>

<last>Spell
<first>Sarah
<add>175 Inwood Avenue
<city>NY
<state>NY
<zip>10034
<item#>T0074
<:unit price>43.00
<paymt> credit
<>
```

(continued)

```
<last>Kadis
<first>Freeman
<add>155 Fourth Avenue
<city>Vestal
<state>NY
<zip>13850
<item#> 0074
<:unit price>42.00
<paymt>cash
<>

<last>Brindel
<first>Robert
<add>159 Colby Street
<city>Nashua
<state>NH
<zip>03063
<item#>3009
<:unit price>$20.00
<paymt>cash
<>
```

3 Running Sort with the *Item Spec*, the output document should look like the following:

```
<last>Robertson
<first>William
<add>910 Hedge Road
<city>Campbell
<state>CA
<zip>95008
<item#>A0076
<:unit price>425.00
<paymt>COD
<>

<last>Spell
<first>Sarah
<add>175 Inwood Avenue
<city>NY
<state>NY
<zip>10034
<item#>T0074
<:unit price>43.00
<paymt> credit
<>

<last>Kadis
<first>Freeman
<add>155 Fourth Avenue
<city>Vestal
<state>NY
<zip>13850
<item#> 0074
<:unit price>42.00
<paymt>cash
<>

<last>Emery
<first>Charles
<add>608 Knoll Road
<city>Manchester
<state>NH
<zip>03101
<item#>/008
<:unit price>125.00
<paymt>credit
<>
```

(continued)

```
<last>Brindel
<first>Robert
<add>159 Colby Street
<city>Nashua
<state>NH
<zip>03063
<item#>3009
<:unit price>$20.00
<paymt>cash
<>

<last>Maclean
<first>Roxanne
<add>3708 Loam Avenue
<city>Anaheim
<state>CA
<zip>92803
<item#>8976
<:unit price>$235.00
<paymt>COD
<>
```

4 Running Sort with the *Payment Spec*, the output document should look like the following:

```
<last>Spell
<first>Sarah
<add>175 Inwood Avenue
<city>NY
<state>NY
<zip>10034
<item#>T0074
<:unit price>43.00
<paymt> credit
<>

<last>Emery
<first>Charles
<add>608 Knoll Road
<city>Manchester
<state>NH
<zip>03101
<item#>/008
<:unit price>125.00
<paymt>credit
<>

<last>Robertson
<first>William
<add>910 Hedge Road
<city>Campbell
<state>CA
<zip>95008
<item#>A0076
<:unit price>425.00
<paymt>COD
<>

<last>Maclean
<first>Roxanne
<add>3708 Loam Avenue
<city>Anaheim
<state>CA
<zip>92803
<item#>8976
<:unit price>$235.00
<paymt>COD
<>
```

(continued)

```
<last>Kadis
<first>Freeman
<add>155 Fourth Avenue
<city>Vestal
<state>NY
<zip>13850
<item#> 0074
<:unit price>42.00
<paymt>cash
<>

<last>Brindel
<first>Robert
<add>159 Colby Street
<city>Nashua
<state>NH
<zip>03063
<item#>3009
<:unit price>$20.00
<paymt>cash
<>
```

6

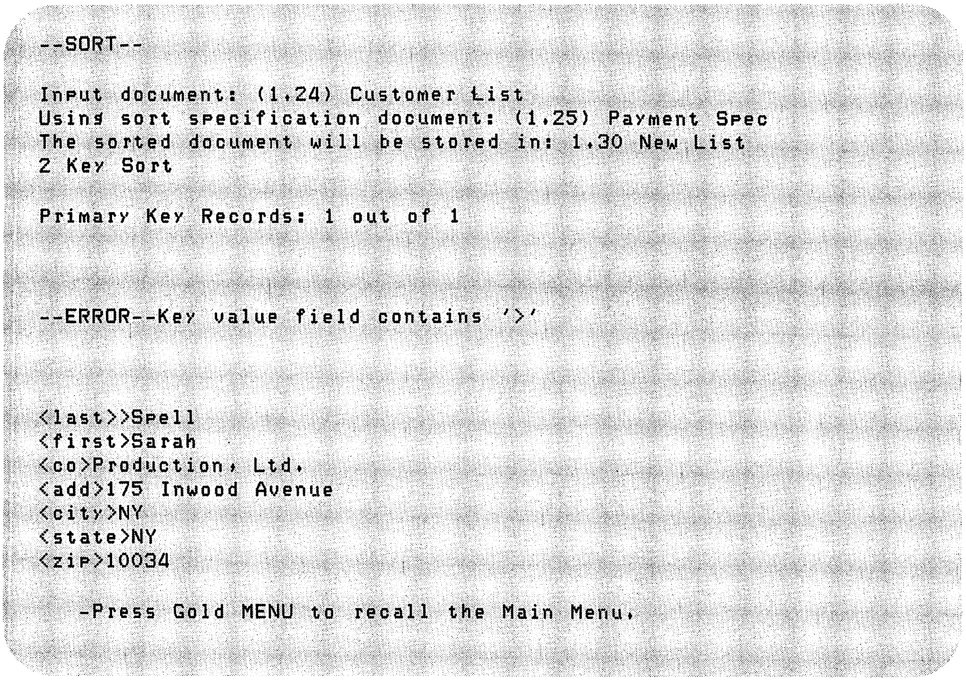
Screen Messages

DECmate displays screen messages to help you complete Sort correctly.

Input Document Errors

An incorrect format of the input document causes *error messages*. To sort records correctly, the input document *must* follow the format described in Chapter 3. If the input document is not in that format, DECmate II displays an error message.

Figure 27 is an example of an input document error message.



```
--SORT--

Input document: (1,24) Customer List
Using sort specification document: (1,25) Payment Spec
The sorted document will be stored in: 1,30 New List
2 Key Sort

Primary Key Records: 1 out of 1


--ERROR--Key value field contains '>'


<last>>Spell
<first>Sarah
<co>Production, Ltd.
<add>175 Inwood Avenue
<city>NY
<state>NY
<zip>10034

   -Press Gold MENU to recall the Main Menu.
```

Figure 27 An Input Document Error Message

NOTE: The first seven lines of the input document record are displayed. The error, itself, may not appear in these lines. The purpose of the message is to identify the record containing the error.

A list of input document error messages with instructions on what to do follows:

`ERROR--Record exceeds 2500 characters`

1. Note the record containing too many characters.
2. Press Gold MENU to cancel Sort. When the Main Menu is displayed, select **E** to edit the input document.
3. Edit the record so that it contains fewer than 2500 characters.

4. File the input document.
5. Select **SR** to start Sort over from the beginning.

```
ERROR--Field name missing '<' or text between records
```

1. Note the record with the missing left angle bracket < or the text between records.
2. Press Gold MENU to cancel Sort. When the Main Menu is displayed, select **E** to edit the input document.
3. Edit the field name by putting in a left angle bracket <. Or, delete text between records.
4. File the input document.
5. Select **SR** to start Sort over from the beginning.

```
ERROR--Field name contains extra '<'
```

1. Note the record containing the extra left angle bracket <.
2. Press Gold MENU to cancel Sort. When the Main Menu is displayed, select **E** to edit the input document.
3. Delete the extra left angle bracket <.
4. File the input document.
5. Select **SR** to start Sort over from the beginning.

```
ERROR--Field name exceeds 30 characters
```

1. Note the record containing the field name with too many characters.
2. Press Gold MENU to cancel Sort. When the Main Menu is displayed, select **E** to edit the input document.
3. Edit the field name to not more than 30 characters.

4 File the input document.

5 Edit the sort specification document. Make sure the field name in the sort specification and the input documents are the same. File the sort specification document.

6 Select **SR** to start Sort over from the beginning.

```
ERROR--Key value field contains '>'
```

1 Note the record containing the field value with the right angle bracket >.

2 Press Gold MENU to cancel Sort. When the Main Menu is displayed, select **E** to edit the input document.

3 Delete the right angle bracket > from the field value.

4 File the input document.

5 Select **SR** to start Sort over from the beginning.

```
ERROR--Record contains duplicate key
```

1 Note the record containing the duplicate key (field name).

2 Press Gold MENU to cancel Sort. When the Main Menu is displayed, select **E** to edit the input document.

3 Delete the duplicate key (field name).

4 File the input document.

5 Select **SR** to start Sort over from the beginning.

```
ERROR--List not terminated '<>'
```

1 Press Gold MENU to cancel Sort.

2 Edit the input document when the Main Menu is displayed.

3 Add a diamond <> to end the list of records.

4 File the input document.

5 Select **SR** to start Sort over from the beginning.

```
ERROR--Unexpected end of file
```

Explanation: This message appears when the data on the input document diskette cannot be read (diskette damaged or dirty).

1 Press Gold MENU to cancel Sort.

2 Verify document diskette. If the diskette has errors, follow the prompts.

3 Select **SR** to start Sort over from the beginning.

```
ERROR--List contains only text
```

1 Press Gold MENU to cancel Sort.

2 Edit the input document when the Main Menu is displayed.

3 Add left < and right > angle brackets to field names. Add diamonds <> to end of records.

4 File the input document.

5 Select **SR** from the Main Menu to start Sort from the beginning.

```
ERROR--Primary Key not found
```

Explanation: The *first* sort field named in the sort specification does not match any field names in the records of the input document.

1 Press Gold MENU to cancel Sort.

2 When the Main Menu is displayed, edit the field names in the input document.

3 File the input document.

4 Edit the sort specification. Make sure the field names in the input and sort specification documents are identical.

5 File the sort specification.

6 Select **SR** to start Sort over from the beginning.

`ERROR--Invalid numeric syntax`

Explanation: The rules for numeric field values have not been followed. For example, an invalid character, such as a letter, is in the field value; or a valid symbol such as + is in the wrong place.

1 Press Gold MENU to stop Sort.

2 Edit the input document when the Main Menu is displayed. Check the numeric field and make sure the field values are correct.

3 File the input document.

4 Select **SR** to start Sort over from the beginning.

`Warning - List contains multiple rulers`

The Sort will continue until complete, unless you can cancel the Sort process. To cancel Sort:

1 Press Gold HALT to pause Sort and then press Gold MENU to cancel Sort.

2 Edit the input document.

3 Only *one* ruler can be in effect for the entire list of records. Remove the other rulers. (See page 18.)

Other Messages

```
ERROR--Output diskette full
```

Explanation: Sometimes Sort can't determine the number of blocks needed for an output document. On rare occasions, while Sort is running, it will run out of diskette space before it has completed the output document. The input list document probably has too many records with blank or nonexistent field values.

1. Press Gold MENU to cancel Sort.
2. Use a new, initialized diskette for the output document.
3. Select **SR** to start Sort over from the beginning.
4. If the error message appears again, edit the input document and type field values in the fields that do not have them. Or, edit the selection specification document and delete the sort field(s) with missing field values. Select **SR** again.

If you have taken your system diskette out of its drive during Sort, this message appears on your screen:

```
Replace system diskette, then
Press Gold MENU to recall the Main Menu.
```

See Chapter 5 for output document messages.

Glossary

Italicized words are also entries in the glossary.

activate

To add an *optional feature*, such as Sort, on the system diskette.

ascending order

According to the *Sort Alphabet*, ascending order is from *lowest value* characters to *highest value* characters.

block

A text storage unit on a diskette with about 512 characters or approximately one-third of a page.

descending order

According to the *Sort Alphabet*, descending order is from *highest value* characters to *lowest value* characters.

diamond

The symbol < > used to mark the end of a record.

empty field

A field that has a *field name* (key), but no *field value.*

error message

A screen message that is automatically displayed when an incorrect response is typed. It explains the problem and tells you what to do next.

feature diskette

The diskette used to *activate* an *optional feature.*

field

One of the units of information in a *record.* A field is identified by a *field name* and a *field value.* For example, a field name could be <**company**> and its value **Digital Equipment Corporation**.

field name

The part of the *field* that identifies the information you will sort. The field name is always enclosed in angle brackets and is followed by a *field value.* See *key.*

field value

The part of the *field* that has the information that is associated with the *field name*. The characters are placed right after the right angle bracket that ends a *field name*.

file

The data in a document.

highest value

The last character in the *Sort Alphabet*.

input document

A list of *records* to be sorted.

invisible characters

A character that is not visible except in the view mode.

key

A *field name*, as defined in the sort specification, on which the sort process operates.

key sort

Information on a Sort display that tells how many *fields* or *keys* you are sorting with.

lowest value

The first character in the *Sort Alphabet*.

missing field

A field that appears in some but not all of the records in the input document.

multikey sort

Sorting *records* on more than one *key* or *field.*

numeric field

A field with a *field name* that begins with a : and has a *field value* that is numeric. For example, <:number>25.00.

optional feature

Software that can be added to the word processing basic software. Sort is an optional feature.

output document

The document that contains the results of the Sort process.

primary key

The first *sort field* or *key* named in the *sort specification document.*

record

A group of related *fields* in an *input document.* A record consists of *field names* and *field values* and a *diamond* to mark the end of the record.

single-key sort

Sorting *records* on one *key* or *field.*

Sort Alphabet

The 62 characters used in sorting a list. The characters are arranged in *ascending* order.

sort field

The *field* in the record on which you want to sort. The field is put in the *sort specification document.*

sort key

See *sort field.*

sort order

Either an ascending or a descending arrangement of records in the *input document.* The order is determined by the *sort specification.*

sort specification document

Determines the *sort fields* and the order of the sorted list.

valid

A character or diskette that is appropriate for the task. For example, – is a valid character for a numeric field.

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HOW TO ORDER ADDITIONAL DOCUMENTATION

DIRECT TELEPHONE ORDERS

In Continental USA and Puerto Rico call **800–258–1710**	In Canada call **800–267–6146**	In New Hampshire, Alaska or Hawaii call **603–884–6660**

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DIGITAL EQUIPMENT CORPORATION
P.O. Box CS2008
Nashua, New Hampshire 03061

DIRECT MAIL ORDERS (Canada)

DIGITAL EQUIPMENT OF CANADA LTD.
940 Belfast Road
Ottawa, Ontario, Canada K1G 4C2
Attn: A&SG Business Manager

INTERNATIONAL

DIGITAL EQUIPMENT CORPORATION
A&SG Business Manager
c/o Digital's local subsidiary
or approved distributor

Internal orders should be placed through the Software Distribution Center (SDC), Digital Equipment Corporation, Northboro, Massachusetts 01532

*Any prepaid order from Puerto Rico must be placed
with the Local Digital Subsidiary:
809–754–7575

DECmate II
Using Sort
AA–N185A–TA

Reader's Comments

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